

Effective Date: Summer 2005-2006

Course Description

Prerequisite: Credit with a grade of “C” or better or registration in MATH 1552. Credit will be given for only one of the following: PHYS 1001, PHYS 2001, PHYS 2101. For students majoring in mathematics, chemistry, physics, and some areas of engineering. Calculus and vector analysis are used in the study of mechanics, heat, and sound.

Course Objectives

Students will:

1. Understand the fundamental principles of mechanics and wave motion.
2. Understand the applications of the principles of mechanics and wave motion.
3. Develop skills to model physical systems mathematically.
4. Develop the problem solving skill in the area of mechanics and wave.

Procedures to Evaluate these Objectives

1. In-class problems after concept presentation
2. In-class exams
3. Cumulative final exam

Use of Results of Evaluation to Improve the Course

1. Student responses to in-class problems will be used to immediately help clarify any misunderstandings and to later adjust the appropriate course material.
2. All exams will be graded and examined to determine areas of teaching which could use improvement.
3. All evaluation methods will be used to determine the efficacy of the material presentation.

Detailed Topical Outline

1. Physics and Measurement.
2. Motion in One Dimension
3. Vectors
4. Motion in Two-Dimension
5. The Laws of Motion
6. Circular Motion and Other Applications of Newton’s Laws
7. Work, Energy, and Power
8. Momentum and Collision
9. Rotational Motion about a fixed axis
10. Static Equilibrium and Elasticity

- 11. Oscillatory Motion
- 12. Fluid Mechanics
- 13. Wave Motion
- 14. Sound Waves
- 15. Vibrations and Wave Motion